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**From:** bounce-34628145-62701352@listserv.unc.edu [bounce-34628145-62701352@listserv.unc.edu]  
**on behalf of** Occupational & Environmental Medicine for Clinicians & Public Health Professionals digest [occ-env-med-l@listserv.unc.edu]  
**Sent:** 5/2/2014 4:21:17 AM  
**To:** occ-env-med-l digest recipients [occ-env-med-l@listserv.unc.edu]  
**Subject:** occ-env-med-l digest: May 01, 2014

OCC-ENV-MED-L Digest for Thursday, May 01, 2014.

1. NPR, CtrPubl Integrity: Unexplained CKD in Latin Am & Sri Lanka Cane Wkers: ?Cd, As, Glyphosate
2. 2: NPR, CtrPubl Integrity, ProMED: Unexpl. CKD in Latin Am & Sri Lanka Cane Wkers: ?Cd, As, Glyphosate
3. Physician position-West Michigan
4. CMV Exam license info
5. MMWR, 2014-05-02, Contents

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**Subject:** NPR, CtrPubl Integrity: Unexplained CKD in Latin Am & Sri Lanka Cane Wkers: ?Cd, As, Glyphosate  
**From:** Gary Greenberg <gngreenberg@gmail.com>  
**Date:** Thu, 1 May 2014 06:30:58 -0400  
**X-Message-Number:** 1

Mysterious Kidney Disease Slays Farmworkers In Central America

by JASON BEAUBIEN  
April 30, 2014 3:30 AM ET

<http://www.npr.org/blogs/health/2014/04/30/306907097/mysterious-kidney-disease-slays-farmworkers-in-central-america>  
or <http://n.pr/1fsx4j3>

In Central America, a form of kidney disease is attacking men in the prime of their lives. Researchers are struggling to explain what's causing it.

The condition appears to be concentrated among male agricultural workers, particularly sugar cane cutters, along the Pacific coast.

The town of Chichigalpa has been hard hit. It's surrounded by the cane fields of El Ingenio San Antonio, one of the oldest and largest sugar estates in Central America. The estate produces raw sugar that's shipped to the U.S. and elsewhere. It also refines ethanol to make a popular rum marketed globally under the name Flor de Cana.

Tejarino's doctor says hundreds of men in Chichigalpa are suffering from this mysterious kind of chronic kidney failure. It's not related to diabetes or other well-known kidney diseases.

In the past Tejarino used to join the roughly 7,000 people who work the sugar harvest here each year. "I worked nine years in the sugar cane harvest," Tejarino says. "And that's what's made me sick."

The first reports of this disease date back at least 20 years. At first the clusters of men dying of kidney failure was dismissed as a fluke. Then it was written off as diabetes or some other underlying health problem that hadn't been correctly diagnosed.

Despite years of research all over the world, scientists still can't definitively pinpoint the cause.

"We don't know. That's the unfortunate part, and we do desperately need to find some answers," says Reina Turcios-Ruiz, a medical epidemiologist with the U.S. Centers for Disease Control and Prevention's office in Guatemala City.

This form of kidney failure, known as insuficiencia renal cronica in Spanish (or chronic kidney disease of unknown origin in English), is now found from southern Mexico to Panama, Turcios-Ruiz says. But it occurs only along the Pacific coast.

The disease is killing relatively young men, sometimes while they're still in their early 20s. Researchers at Boston University have attributed about 20,000 deaths to this form of kidney failure over the past two decades in Central America.

As the disease progresses, agricultural laborers, who may earn a couple of thousand dollars a year, if they're lucky, end up in need of dialysis that costs tens of thousands of dollars annually.

Treatment options in El Salvador, Guatemala and Nicaragua for kidney problems are extremely limited, Turcios-Ruiz says. The epidemic has become a major burden on already overstretched public health systems.

One of the prominent theories about the disease is that men get dehydrated as they cut sugar cane under the intense tropical sun. Then the dehydration somehow makes them more susceptible to environmental toxins.

Researchers are also looking into whether an agricultural chemical might be causing the problem.

A similar epidemic is afflicting sugar farmers in Sri Lanka, which has a hot, dry climate similar to western Nicaragua. In response, the Sri Lankan government banned the use of glyphosate this past March. Glyphosate is the generic version of the popular herbicide marketed by Monsanto as Roundup.

Officials at the Ingenio San Antonio in Chichigalpa say they also use Roundup. But a link between the herbicide and the disease hasn't been proven.

Other theories about why these men are dying have been all over the map.

For a while health officials blamed the kidney failure on a potent local moonshine, which included industrial-strength ethanol smuggled out of the sugar plant.

Some people think the epidemic might be linked to hantavirus, a rare respiratory virus spread by rats. Tejarino's doctor at the clinic in Chichigalpa thinks overuse of over-the-counter pharmaceuticals could be to blame.

Tejarino dismisses this idea and goes back to the herbicide theory.

"It was the chemicals, the chemicals at the plantation," he says.

More than a decade ago, the sugar company in Chichigalpa recognized that something was amiss. The company started testing the kidney function of workers before each harvest. Anyone showing signs of kidney failure, even early stage kidney disease, wasn't allowed to work.

Now the town is burdened with sick, unemployed men and widows. One community on the edge of Chichigalpa has lost so many men that it's called La Isla de las Viudas â€” the Island of Widows.

Tejarino accuses the company of poisoning its own workers, then abandoning them. "They got rid of me," he says. "They treat us like garbage."

Company officials deny such allegations. The refinery has its own state-of-the-art hospital. The company offers free education to its workers' children. And it feeds employees during their shifts.

What about the sick laborers who can't work? The company says it provides monthly food packets and basic medical supplies to a group of about 2,000 ailing former workers, as well as to widows in Chichigalpa.

The company is as eager as everyone else to find the cause of the disease, says Alvaro Bermudez, the head of El Ingenio San Antonio. "It's a problem in the sense that any problem that affects our community affects us." But Bermudez says the company is not sickening its own workers.

Frustration over the disease â€” especially what's causing it and who's to blame â€” has led to violent protests against the sugar company in Chichigalpa. Earlier this year police killed one protester and

seriously wounded another near the plantation gates.

Tejarino's wife, Laura, is also frustrated, but in a quiet, motherly way. "He's been throwing up all morning," she says. "It's very hard to see him this way."

She sits next to her husband, slowly running her fingers through his black hair. She says people all around them are dying. It's been going on for years, and in her opinion, everyone's ignoring it.

"This disease doesn't spare anyone," she says. And researchers think it could be years before anyone solves the mystery.

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SUMMARY REPORT:

Boston University investigation of chronic kidney disease in Western Nicaragua, 2009-2012

[http://www.cao-ombudsman.org/cases/document-links/documents/BU\\_SummaryReport\\_August122012.pdf](http://www.cao-ombudsman.org/cases/document-links/documents/BU_SummaryReport_August122012.pdf)

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New urgency targets mysterious kidney disease in Central America

By Sasha Chavkin  
6:00 am, April 29, 2013

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Subject: 2: NPR, CtrPubl Integrity, ProMED: Unexpl. CKD in Latin Am & Sri Lanka Cane Wkers: ?Cd, As, Glyphosate

From: Gary Greenberg <gngreenberg@gmail.com>

Date: Thu, 1 May 2014 06:49:12 -0400

X-Message-Number: 2

Apologies: accidentally sent incompletely created & mal-edited draft.  
What follows is better version.

- G

----- Forwarded message -----

From: Gary Greenberg <gngreenberg@gmail.com>

Date: Thu, May 1, 2014 at 6:30 AM

Subject: NPR, CtrPubl Integrity: Unexplained CKD in Latin Am & Sri Lanka Cane Wkers: ?Cd, As, Glyphosate

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Linked:

SUMMARY REPORT:

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[http://www.cao-ombudsman.org/cases/document-links/documents/BU\\_SummaryReport\\_August122012.pdf](http://www.cao-ombudsman.org/cases/document-links/documents/BU_SummaryReport_August122012.pdf)

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New urgency targets mysterious kidney disease in Central America

By Sasha Chavkin

6:00 am, April 29, 2013

{Note: 1 year ago}

<http://www.publicintegrity.org/2013/04/29/12582/new-urgency-targets-mysterious-kidney-disease-central-america>

or <http://www.publicintegrity.org/node/12582>

SAN SALVADOR, El Salvador â€” Bringing new urgency to a mysterious

kidney disease afflicting the region's agricultural laborers, Central America's health ministries signed a declaration Friday citing the ailment as a top public health priority and committing to a series of steps to combat its reach.

Over the last two years, the Center for Public Integrity has examined how a rare type of chronic kidney disease (CKD) is killing thousands of agricultural workers along Central America's Pacific Coast, as well as in Sri Lanka and India. Scientists have yet to definitively uncover the cause of the malady, although emerging evidence points to toxic heavy metals contained in pesticides as a potential culprit.

Following years of official inaction in the U.S. and beyond, Friday's San Salvador declaration "for the first time" formally recognized the disease and its unique characteristics.

"This disease fundamentally affects socially vulnerable groups of agricultural communities along the Pacific Coast of Central America, predominates among young men, and has been associated with conditions including toxic environmental and occupational risk factors, dehydration, and habits that are damaging to renal health," said the declaration adopted by the Council of Health Ministers of Central America.

The ministers pledged potentially meaningful new steps, including more detailed statistical tracking of CKD, the development of national and regional plans to investigate and treat the disease, and promotion of stronger regulation of agrochemicals.

The declaration represented a major victory for El Salvador and its health minister, Dr. Maria Isabel Rodriguez. Ninety years old and barely five feet tall, peering from behind enormous eyeglasses, Rodriguez has been a driving force behind catapulting the ailment from obscurity to formal recognition as a leading regional threat.

"This is a disease of poor people," Rodriguez said. "This is a disease of people who work in the fields and have very bad living conditions."

The outcome signaled a turnaround by the U.S. Centers for Disease Control and Prevention, which in 2011 helped beat back an effort by El Salvador to declare the malady a top priority for the Americas. The CDC now says it has devoted "several hundred thousand" dollars to support research of the disease, created a multidisciplinary internal task force on chronic kidney disease in Central America, and pledged to help fund a national survey by El Salvador to measure the prevalence of chronic ailments including CKD.

"We have that commitment to provide the support to follow and strengthen their investigations in the ministries of health," said Dr. Nelson Arboleda, the CDC's director for Central American Region.

The San Salvador conference also marked a threshold in international cooperation in combating the mysterious disease. Following years in which researchers battling parallel epidemics in Central America, Sri Lanka and India failed to compare results, Sri Lanka sent an official delegation to El Salvador and urged Central America to consider its research findings and policy responses as a model for future action.

"We are having enough clinical, biochemical and histopathological evidence to say this is the same disease," said Channa Jayasumana, Sri Lanka's delegate in El Salvador.

The disease has felled thousands. In Sri Lanka, more than 8,000 patients are receiving treatment for CKD of unknown cause, an official report found, a figure representing just a fraction of those affected by a disease that remains latent until its advanced stages. More than 16,000 men died of kidney failure in Central America from 2005 to 2009, with annual deaths increasing more than threefold since 1990, according to an analysis of World Health Organization data. In El Salvador, CKD has become the leading cause of hospital deaths among adult men.

#### The Debate over Pesticides

Although the declaration reflected broad agreement to take action, the two-day conference that preceded its signing was dominated by a forceful debate. The central question: whether there was adequate evidence to declare the disease is linked to agrochemicals and respond

by restricting their use.

At the conference, El Salvador presented findings from an ongoing official study, conducted jointly with the Pan American Health Organization, suggesting that pesticides and fertilizers containing heavy metals may be to blame. Environmental tests of soil and water samples in a village heavily affected by CKD, Ciudad Romero, found the presence of high levels of cadmium and arsenic, heavy metals toxic to the kidneys. Among a sample of 42 residents of Ciudad Romero who suffer from CKD, all reported applying pesticides without any protective equipment.

A national sample of 46 CKD patients found that 96% reported using pesticides, and medical tests of these patients revealed additional symptoms such as impaired reflexes and damage to arteries in the lower limbs that suggest toxic poisoning.

El Salvador's findings echo those in Sri Lanka. An official study there, conducted by the Sri Lankan health ministry in partnership with the World Health Organization, documented elevated levels of cadmium and arsenic contained in agrochemicals and within environmental samples from the endemic region " and found the same heavy metals in samples of urine, hair and nails of patients. Sri Lanka also found residues of several pesticides in the urine of many of the affected patients.

Since publication of its report, the Sri Lankan government has imposed a ban on four common pesticides from use in the endemic region. Rodriguez, El Salvador's health minister, said she also hopes to ban pesticides that are potentially linked to the epidemic.

Yet other researchers questioned the weight of evidence pointing to pesticides. El Salvador found arsenic above permitted levels in one location in Ciudad Romero and cadmium above permitted levels in another location in the same village " hardly proof of widespread contamination, critics say. The nation also has yet to complete toxicology tests that will determine whether the heavy metals came from pesticides, or whether heavy metals and pesticide residues appeared in blood, urine, or tissue samples of CKD patients.

Basic questions about the pesticide hypothesis remain unanswered in both El Salvador and Sri Lanka's reports, including evidence of how the agrochemicals are entering victims' bodies or what products are at fault. Despite the dramatic parallel findings from the recently released reports, no peer-reviewed studies in more than a decade of research have established a definitive link to agrochemicals.

"There is still no direct causal connection," said Dr. Ramon Trabanino, a Salvadorean nephrologist who published two of the first studies demonstrating the presence of the disease. "I think all of this is political. They want something to blame."

The controversy came to head in the final portion of the scientific conference. The argument pitted skeptics of the evidence against conference organizers who argued that the Sri Lankan and Salvadorean results were clear enough to create a moral obligation to take precautionary action. The debate was concluded by Rodriguez, who delivered a forceful defense of El Salvador's findings.

"What has been presented here is scientific fact, and I will defend it with my nails," she said, holding up bright red-painted fingernails and reducing the room to laughter.

#### Chemicals in the Spotlight

Two chemicals in particular have come into investigators' crosshairs in both El Salvador and Sri Lanka: 2,4-D and glyphosate. 2,4-D is a common herbicide used to control weeds, and glyphosate is the active ingredient in the world's most popular herbicide, Roundup. Both are used worldwide, including in countless areas not affected by this distinctive form of chronic kidney disease.

- - - See original article online for full content - - -

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ProMED:

Undiagnosed Renal Disease, Men - Multicountry: Field Workers, Arsenic

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A ProMED-mail post <http://www.promedmail.org>  
ProMED-mail is a program of the International Society for Infectious Diseases  
<http://www.isid.org>

Published Date: 2013-04-17 09:45:53  
<http://www.promedmail.org/direct.php?id=1651299>  
Archive Number: 20130417.1651299

Date: Sun 7 Apr 2013  
Source: The Sundaytimes Sri Lanka [edited]  
<http://www.sundaytimes.lk/130407/sunday-times-2/kidney-disease-a-possibility-overlooked-40104.html>

Kidney disease in the dry zone has become the subject of renewed discussion after the submission of the final report by the World Health Organization. The key findings of this report identify long-term exposure to arsenic and cadmium as the cause of the disease. It rules out drinking water as the possible source of exposure but points to the food chain as a possibility.

A recent study reported that arsenite uptake through the skin is 29 times higher than arsenate uptake and cautioned that dermal exposure resulting from standing in contaminated water in rice fields may be grossly underestimated. Elimination of water as a source comes as a surprise to many because high levels of 20-200 microgram/L were reported (<http://www.arsenic.lk> in Sinhala) in drinking water sources of patients. Drinking water containing high arsenic levels is generally accepted as the source of arsenic in kidney patients in Bangladesh.

Rice, being the staple food in the country, has received due diligence as a possible source in the food chain. Arsenic content in rice has increased from below 100 microg/kg in 2004 to 500 microg/kg in 2011 (<http://www.arsenic.lk> in Sinhala). [This is a huge increase in a relatively short period of time. - Mod.TG] However, unlike water, rice from the dry zone is consumed all over the country but it has not been implicated in kidney disease in the wet zone.

When drinking water and staple rice are not possible sources of arsenic, the search for overlooked possibilities or a missing link has to begin in earnest. Absorption through the skin -- as an overlooked possibility -- is the route discussed here.

Most of the published past research conclude that the absorption of arsenic through the skin is negligible. However, recent research has begun to contradict this. Arsenic exists in several organic and inorganic forms. The most dominant are the inorganic forms; trivalent arsenite and pentavalent arsenate. The arsenate form gets reduced to arsenite under anoxic conditions found in paddy fields and deep reservoirs.

A recent study reported that arsenite uptake through the skin is 29 times higher than arsenate uptake and cautioned that dermal exposure resulting from standing in contaminated water in rice fields may be grossly underestimated.

Arsenite is more toxic than arsenate and also more soluble. Removing arsenic through reverse osmosis is successful with arsenate but only partially with arsenite. At neutral and acidic pH found in the environment and the human body, arsenate is largely ionised while arsenite is not. This difference is mostly responsible for the difference in behaviour of arsenate and arsenite.

Lesions on the feet and hands are a primary symptom of arsenic poisoning. Once lesions develop on the skin the uptake of arsenic could increase well above the uptake through intact skin and result in a spiraling effect. This hypothesis of arsenite absorption through the skin as the mode of arsenic uptake by the human body requires further testing and verification. The practice of treating all forms of arsenic as equal has to change to form specific analysis. Protective wear for feet and hands could be introduced and its effect could be studied to expedite the potential remedial strategy.

[Byline: Jatal D Mannapperuma, PhD]

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Communicated by:  
ProMED-mail

<promed@promedmail.org>

[There are a number of ways that products can enter the body: inhalation, absorption, ingestion, and injection. Absorption is often thought of as products being absorbed through the GI tract, but it is especially important through the skin. The integument is one of the largest organs of the body.

There are different forms of arsenic. There are 2 forms of inorganic arsenic: the reduced or trivalent arsenic(+3) or arsenite, and the oxidized or pentavalent (+5) form known as arsenate. Both of these forms can be absorbed and accumulated in tissues and body fluids.

There are also organic arsenics, but these are generally regarded as less harmful, by orders of magnitude.

This article makes the statement that lesions on the hands and feet are primary symptoms of arsenic poisoning. That may be the case with absorption through the skin, but it not usually what we think of as signs and symptoms of arsenic poisoning. However, if the skin is interrupted in some fashion, a lesion, a blister or other types of interruption in the integument, then absorption may occur more rapidly as there is a much more direct route into the body.

As this article indicates, this is something to be looked into and is not presented here as the cause of these people's renal failure. - Mod.TG]

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Subject: Physician position-West Michigan  
From: Donald Sheill <sheilld@mercyhealth.com>  
Date: Thu, 1 May 2014 12:31:28 +0000  
X-Message-Number: 3

Occupational Physician needed in West Michigan

We are in need of a Board-certified occupational physician for our busy occupational medicine practice on the Lake Michigan shoreline.

Our offices are in Muskegon, Grand Haven, and Grand Rapids.

For more information, please reply by email.

Don Sheill, MD, MPH  
Mercy Health  
Workplace Health  
sheilld@mercyhealth.com

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Subject: CMV Exam license info  
From: James Butler <drjwbutler@gmail.com>  
Date: Thu, 1 May 2014 10:56:14 -0500  
X-Message-Number: 4

I am registered in two states with two licenses.(Kentucky and Indiana)

Today I did a physical in indiana, but the certificate listed my kentucky license.

How do I fix that?

--

James W Butler MD MPH  
FACOEM FASMA C-IME C-MRO  
Occupational & Aerospace Medicine  
Orthopaedic Associates  
10455 Orthopaedic Drive  
Newburgh, In 47630  
812-424-9291, fax = 812-421-2722drjwbutler@oaevansville.com Drjwbutler@gmail.com

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Subject: MMWR, 2014-05-02, Contents  
From: Gary Greenberg <gngreenberg@gmail.com>  
Date: Thu, 1 May 2014 23:46:33 -0400  
X-Message-Number: 5



\*May 2, 2014 / Vol. 63 / No. 17\*

\*Download .pdf document of this issue\* [image: Adobe PDF file]<<http://www.cdc.gov/mmwr/pdf/wk/mm6317.pdf>>

CE Available <[http://www.cdc.gov/mmwr/cme/weekly\\_conted.html](http://www.cdc.gov/mmwr/cme/weekly_conted.html)>

- Potentially Preventable Deaths from the Five Leading Causes of Death â€” United States, 2008â€”2010<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a1.htm?s\\_cid=mm6317a1\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a1.htm?s_cid=mm6317a1_w)>

Whole text posted to Occ-Env-Med-L, the free international electronic forum in Occupational & Environmental Medicine.  
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- Outbreak of Campylobacteriosis Associated with a Long-Distance Obstacle Adventure Race â€” Nevada, October 2012<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a2.htm?s\\_cid=mm6317a2\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a2.htm?s_cid=mm6317a2_w)>

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- Falls and Fall Injuries Among Adults with Arthritis â€” United States, 2012<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a3.htm?s\\_cid=mm6317a3\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a3.htm?s_cid=mm6317a3_w)>

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- \*Notes from the Field:\* Investigation of Infectious Disease Risks Associated With a Nontransplant Anatomical Donation Center â€” Arizona, 2014<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a4.htm?s\\_cid=mm6317a4\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a4.htm?s_cid=mm6317a4_w)>

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- \*Announcements:\* National High Blood Pressure Education Month â€” May 2014<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a5.htm?s\\_cid=mm6317a5\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a5.htm?s_cid=mm6317a5_w)>

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- \*Announcements:\* Older Americans Month â€” May 2014<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a6.htm?s\\_cid=mm6317a6\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a6.htm?s_cid=mm6317a6_w)>

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- \*Announcements:\* ALS Awareness Month â€” May 2014<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a7.htm?s\\_cid=mm6317a7\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a7.htm?s_cid=mm6317a7_w)>

Whole text posted to Occ-Env-Med-L, the free international electronic forum in Occupational & Environmental Medicine.  
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- \*Erratum:\* Vol. 63, No. 14<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a8.htm?s\\_cid=mm6317a8\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a8.htm?s_cid=mm6317a8_w)>  
- \*QuickStats:\* Percentage of Children Aged 6â€”17 Years Prescribed Medication During the Preceding 6 Months for Emotional or Behavioral Difficulties, by Census Region â€” National Health Interview Survey, United States, 2011â€”2012<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a9.htm?s\\_cid=mm6317a9\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317a9.htm?s_cid=mm6317a9_w)>  
- Notifiable Diseases and Mortality Tables<[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317md.htm?s\\_cid=mm6317md\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6317md.htm?s_cid=mm6317md_w)>

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This is the free Discussion Forum for Clinical & Public Health professionals in Occupational & Environmental Medicine (exposure-related human disease).

Originated at Duke University in 1993, it now is centered at Univ. N. Carolina School of Public Health, where it is still managed by Gary Greenberg, MD

Please contact GNGreenberg@gmail.com for any questions.

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